

REMARKS

Reconsideration and allowance of the subject application are respectfully requested in view of the foregoing amendments and the following remarks.

Claims 3-7 are pending in the application, with Claims 3 and 6 being independent. Claims 1 and 2 previously have been cancelled without prejudice. Claims 5-7 have been newly added. Claim 3 has been amended. Support for this amendment is found at least at page 9, lines 13-15, and page 9, line 23 through page 10, line 3.

In the Office Action, Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Application Publication No. 2002/0139502 (Hallstrom et al.). In addition, the Kawano et al. patent, the Kawai et al ‘078 patent, and the Kawai et al. ‘162 publication were cited to show that a polymer of the weight average molecular weight of Hallstrom et al. would be capable of acting as a sizing agent, since while the polymer of Hallstrom et al. has a high molecular weight of 500,000 to above 1,000,000, the polymers of these other citations have a molecular weight of 100,000 to 1,000,000 (Kawano et al. patent), 2,000 to 1,000,000 (Kawai et al. ‘078 patent), and 2,000 to 1,000,000 (Kawai et al. ‘162 publication).

In response, while not conceding the propriety of the rejection, Claim 3 has been amended. Applicant submits that as amended, Claim 3 is allowable for the following reasons.

Independent Claim 3 is directed to a recording sheet including fibrous pulps, fillers, and a sizing agent. The sizing agent includes a vinyl copolymer having a repeating unit (i) represented by general formula (1) specified in Claim 3, and a repeating unit (ii) represented by general formula (2) specified in Claim 3, the ratio by mass, (i):(ii), of the repeating unit (i) to the repeating unit (ii) being 60:40 to 90:10.

Claim 3 has been amended to recite that the vinyl copolymer has a weight-average molecular weight of about 20,000 to 60,000.

By this arrangement, it is possible to provide a plain-paper recording sheet that can record full color images with high print density, high water resistance, high light resistance, and other high quality color-forming properties, without substantial ink bleeding or striking through, at an affordable price. Furthermore, the base layer of such a recording sheet has excellent coating properties when treated with such a sizing agent and the vinyl copolymer is evenly distributed.

In contrast, as is admitted in the Office Action, the Hallstrom et al. citation is not understood to disclose or suggest a vinyl copolymer having a weight-average molecular

weight of about 20,000 to 60,000, as recited by amended Claim 3. Rather, this citation discloses in paragraph [0020] a polymer having a weight average molecular weight of "at least about 500,000, suitably above about 1,000,000 and preferably above about 2,000,000". Further, the Hallstrom et al. citation is not understood to disclose or suggest a sizing agent comprising a vinyl copolymer having a repeating unit (i) represented by general formula (1) specified in Claim 3, and a repeating unit (ii) represented by general formula (2) specified in Claim 3. Rather, this citation uses a vinyl copolymer as a drainage and retention aid for a papermaking process, as discussed in paragraph [0002].

To establish a prima facie case of obviousness, MPEP § 2142 requires to cited art to disclose or suggest all the claimed features. Here, as noted above, the Hallstrom et al. citation is not understood to disclose or suggest at least two features of amended Claim 3. Therefore, the Office has not yet satisfied its burden of proof to establish a prima facie case of obviousness of Claim 3 over this citation. For this reason, Applicant respectfully requests that the rejection of Claim 3 be withdrawn. And because new independent Claim 6 is a corresponding process claim, it is allowable for corresponding reasons.

In addition, the Office Action provides no motivation to change the copolymer used in the Hallstrom et al. patent for one used in the citations to Kawano et al., Kawai et al. '078, or Kawai et al. '162 to produce a recording sheet having a sizing agent comprising a

vinyl copolymer having a repeating unit represented by general formula (1) and a repeating unit (ii) represented by general formula (2), in the recited ratio and having a weight-average molecular weight of about 20,000 to 60,000, as recited by amended Claim 3. And such a motivation is needed for the Office to satisfy its burden of proof to establish a prima facie case of obviousness to reject amended Claim 3:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (MPEP § 2142)

Moreover, any such modification of the Hallstrom et al. citation raises the question of whether such a modification would render the Hallstrom et al. citation unsatisfactory for its intended purpose, which is prohibited by MPEP § 2143.01 V, and raises the question of whether such a modification would change the principle of operation of the Hallstrom et al. citation, which is prohibited by MPEP § 2143.01 VI. This can be seen as follows. The relatively low molecular weight vinyl copolymers of the Kawano et al., Kawai et al '078, or Kawai et al. '162 citations are understood to be used for improving recording-sheet water resistance and/or ink absorption of printed images on already produced paper, while the relatively high molecular weight vinyl copolymer in the Hallstrom et al. citation is

understood to be used as a drainage and retention aid for making paper. The Office has provided no evidence that a relatively low molecular weight vinyl copolymer substituted into the Hallstrom et al. citation would satisfactorily perform the drainage and retention functions intended by the Hallstrom et al. citation, as required by MPEP § 2143.01 V (“If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.”). In addition, it appears that the proposed modification of the Hallstrom et al. citation would change the operation of the copolymer from one of drainage and retention for the purpose of papermaking to one of recording-sheet water resistance and/or ink absorption of already produced paper. This alteration clearly changes the principle of operation of the copolymer in the Hallstrom et al. citation, contrary to MPEP § 2143.01 VI (“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious”).

Moreover, it would be improper for the Office Action to argue that since these references can be combined, they should be combined to produce the claimed invention. Because MPEP § 2142.01 prohibits this kind of reasoning to establish a prima facie case of obviousness: “The mere fact that references can be combined or modified does not render

the resultant combination obvious unless the prior art also suggests the desirability of the combination”.

For all of these reasons, the Office is not understood to have satisfied its burden of proof to establish a motivation to combine these citations to produce the claimed invention, and therefore, the Office is not understood to have established a prima facie case of obviousness against amended Claim 3 for this additional reason. Therefore, Applicant respectfully requests that the rejection of amended Claim 3 be withdrawn for this additional reason.

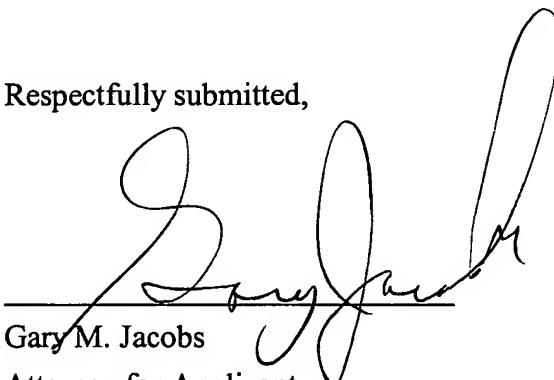
The dependent claims are allowable for the reasons given for the independent claims and because they recite features that are patentable in their own right. Individual consideration of the dependent claims is respectfully solicited.

Applicant also respectfully requests that this Amendment After Final be entered. This Amendment was not presented earlier as it was earnestly believed that the claims on file would be found allowable. Given the Examiner’s familiarity with the application, Applicant believes that a full understanding and consideration of this Amendment would not require undue time or effort by the Examiner. Moreover, Applicant submits that this Amendment places the application in condition for allowance. Accordingly, entry of this Amendment is believed to be appropriate and such entry is respectfully requested.

In view of the above amendments and remarks, the application is now in allowable form. Therefore, early passage to issue is respectfully solicited.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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